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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,709	08/26/2003	Richard L. Wilson	03179-PA	4059

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EXAMINER	
KEYS, ROSALYND ANN	

ART UNIT	PAPER NUMBER
1621	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/648,709	WILSON ET AL.	
	Examiner	Art Unit	
	Rosalynd Keys	1621	

-- The MAILING DATE f this communication appears on th c ver sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 23-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 23-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1 and 23-37 are pending.

Claims 1 and 23-37 are rejected.

Claims 2-22 are cancelled.

Response to Amendment

2. The amendment filed October 26, 2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material, which is not supported by the original disclosure, is as follows: the limitation of a refluxed evaporator, which appears in claim 1, steps c, e and g; and claims 33-35 and 37. Also the specification lacks support for a molar ratio of dissolved iron and ethane between 0.002 and 0.01.

Applicant is required to cancel the new matter in the reply to this Office Action.

3. The rejection of claims 1-3, 5-8 and 10 under 35 U.S.C. 102(b) as being anticipated by Wilson et al. (US 6,313,360) is withdrawn since the amended and new claims require that the olefin is ethane and the haloalkane is 1,1,1,3-tetrachloropropane.

4. The rejection of claims 1, 4, 6, 9 and 11-22 under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (US 6,313,360) as applied to claims 1 and 6 above, and further in view of Woodard (EP 0 131 561) is withdrawn due to the addition of steps e-g in claim 1.

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification does not provide support for using tripropylphosphate or triisobutylphosphate as cocatalysts, as claimed in new claim 36.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1 and 23-37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. See above objection to the amendment filed October 26, 2004.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claims 1 and 23-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (US 6,313,360) in view of Woodard (EP 0 131 561) and further in view of Kohl et al. (US 3,386,905).

Wilson et al. teach preparing a haloalkane (1,1,1,3,3-pentachloropropane) from carbon tetrachloride and an olefin (vinyl chloride) in the presence of a catalyst mixture comprising metallic iron, dissolved iron species (ferric chloride and ferrous chloride) and an organophosphate cocatalyst (tributyl phosphate) by the method steps a-d disclosed in claim 1 (see entire disclosure, in particular column 2, line 49 to column 5, line 63). The solid-liquid separation device utilized is a sedimentation tube (see for example column 3, lines 58-65).

Wilson et al. teach the claimed invention as described above, but fail to specifically teach preparing 1,1,1,3-tetrachloropropane from carbon tetrachloride and ethylene. Wilson et al. differ from the instant claim in that a different olefin is utilized as the starting material thus preparing a different haloalkane product. However, the starting materials are analogous in that they are both olefins, which produce analogous haloalkanes. One having ordinary skill in the art at the time the invention was made would have been motivated to employ the process of Wilson et al. with the expectation of obtaining the desired product because the ordinary skilled artisan would have expected the analogous starting materials to react similarly to produce the desired product. In fact, this similar reactivity is shown by Woodard, who teaches reaction of a wide variety of olefins, including ethylene and vinyl chloride, with carbon tetrachloride in the presence of a catalyst system comprising metallic iron, which includes dissolved iron,

and a phosphorus compound, such as tributyl phosphate to produce the desired haloalkane product (see entire disclosure, in particular page 3, line 60 to page 5, line 34). One having ordinary skill in the art would be able to ascertain the reaction conditions and the specific haloalkane starting material needed to obtain the desired haloalkane product.

Wilson et al. fail to teach the specific reaction conditions and mole ratios of reactants and catalysts needed when using ethene and carbon tetrachloride. However, these variables are well known (see pages 5 and 6 of Woodard and column 1, line 26 to column 3, line 30 of Kohl et al.). Thus, the selection of these variables would have been obvious to one having ordinary skill in the art.

Wilson et al. fail to teach distilling the overhead fraction to recover unconverted carbon tetrachloride and ethane and a purified 1,1,1,3-tetrachloropropane.

Kohl et al. teach preparing 1,1,1,3-tetrachloropropane, wherein the carbon tetrachloride is recycled to reduce the cost of production and providing an economical method for producing 1,1,1,3-tetrachloropropane and that the 1,1,1,3-tetrachloropropane product has many uses (see column 3, lines 48-66).

One having ordinary skill in the art at the time the invention was made would have found it obvious to recycle any unreacted starting materials, in particular carbon tetrachloride, since such recycle would allow one to prepare 1,1,1,3-tetrachloropropane at a reduced cost.

Woodard teach that where the reaction mixture contains any unreacted material after the reaction is completed, the unreacted material can be removed by distillation.

One having ordinary skill in the art at the time the invention was made would have been motivated to distill the product 1,1,1,3-tetrachloropropane to remove any

unreacted starting materials as taught by Woodard and the recover the 1,1,1,3-tetrachloropropane since Kohl et al. teach that it has many uses.

Response to Arguments

11. Applicant's arguments filed October 26, 2004 have been fully considered but they are not persuasive.

The Applicants argue that Woodard did not disclose how a continuous system could be designed and it was an object of the Applicants invention to fashion such a method. This argument is not persuasive because on page 7, lines 15-16 Woodard teaches that his process can be adapted for continuous operation, for example in a cascaded stirred tank reaction system. Thus, one having ordinary skill in the art would have found the conversion from a batch to a continuous process to be an obvious modification. Further, it is well established that batch and continuous processes are not patentably distinct. See In re Dilnot, 319 F. 2d 188, 138 USPQ 248 (CCPA 1963).

The Applicants argue that Wilson et al do not teach the unique process conditions of the instant invention. This argument is not persuasive because the reaction conditions of the instant invention are not unique, but are well known and taught by both Kohl and Woodard, as disclosed above.

The Applicants argue that Woodard cannot be combined with Wilson et al. because Woodard prepared 1,1,1,3-tetrachloropropane and Wilson et al. prepare 1,1,1,3,3-pentachloropropane. The Examiner disagrees. Woodard not only teaches that preparation of 1,1,1,3-tetrachloropropane but also he implicitly teaches the preparation of 1,1,1,3,3-pentachloropropane because Woodard teach the use of vinyl chloride as an olefin starting material in addition to the use of ethane as a starting material. The two

are combinable because Woodard shows that in the production of a haloalkane by reacting an olefin with carbon tetrachloride in the presence of tributyl phosphate, metallic iron and dissolved iron one can utilize either ethene or vinyl chloride as the starting olefin depending upon the desired haloalkane product (see for example page 7, lines 27-34 of Woodard). Thus, although the process of the instant invention is not exactly like the process of Wilson et al., it is considered to be obvious to the process of Wilson et al. since it is an analogous process and proceeds as expected.

For the above reasons the instant invention is considered to be obvious over Wilson et al. in view of Woodard.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wilson et al. (US 6,720,466 B2) teach the use of two refluxed

evaporators , wherein the bottoms product from the first refluxed evaporator is sent to a second reflux evaporator to prevent excessive catalyst degradation, see entire disclosure, in particular column 5, line 60 to column 6, line 11).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosalynd Keys whose telephone number is 571-272-0639. The examiner can normally be reached on M, R and F 3:00-8:00 pm and T-W 5:30-10:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rosalynd Keys
Primary Examiner
Art Unit 1621

January 9, 2005